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August 2003

The Computer PAPER

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September 2003
Cover Story: Gadget Guide
Lab Test: Tablet PC

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< COMMENTARY >

Switching laptops

Although I'm not into reviewing at all, I read from Townsend's article "Macs can no longer just talk amongst themselves" (TOP July) in its entirety. What got me hooked was the outline next to Lemo's picture which said: "My name is Lemo Townsend and I'm a Switcher." I am a potential switcher myself and I hope Lemo will expand this short take on his Windows-to-Mac conversion into a full series. I'm sure there are many of us who would like to get the benefit of a switcher's experience before taking the plunge ourselves.

Kris Young

We Mac people have had a simple method of networking and file sharing PC data for years and it is to allow the PC to use the AppleLink network ("Macs can no longer just talk amongst themselves," TOP July). Same CAT 5 cable between them, but the PC is loaded with PCLINK, an inexpensive software from Macrom. Then the Mac's hard drive, or any other AppleLink network device, can be mounted or seen on the PC just like another hard drive or printer, etc. Perfect.

John Niklas

TOP applies. For the third installment of his Making the Switch series, which will appear in the September issue, Lemo Townsend plans to look at this product.

Out of focus

I usually enjoy the many snapshots reviews you people do. The recent reviews of digital cameras (cover feature, TOP July) have me puzzled, however. No one ever mentions aperture as a feature of a digital camera. To get that info, one usually has to go to the Web site of the manufacturer. I would appreciate it if you could get someone to write an article on lens apertures and quality of digital cameras and how they relate to the quality of the pictures.

In SLR cameras, aperture and lens quality is one of the most important factors. But digital cameras come with such minuscule lenses that one has to learn the impact of lens size again from scratch.

The most annoying thing of digital cam-

eras so-one ever mentions is that they are great when you have bright light conditions as you do when working outdoors. But, they are the pits, when you're trying to take a photograph indoors at a distance of over 5 m (16 ft.). If you take them with a flash, you get the things or people in the foreground overexposed, and everything beyond 3 m is underexposed. This is the same effect you would have had with a simple \$25 box camera!

Who cares for many magazines if your picture is too dark?

Another factor often overlooked is the sharpness of the picture. After reading many reviews on the Internet, I found that "blurry images" rank as the main complaint of many cameras. Usually this is related to the quality of the lens, occasionally to the focus mechanism. It seems that camera manufacturers figure that with such a small lens, they don't need the quality as long as they have the megapixels.

So, please let's hear it from expert photographers: What are digital camera lens quality?

I have heard from one professional photographer that many of them are starting to buy digital bodies for their original SLR camera lenses.

Duke Dayle

Some background on backing up

I wanted to add a few words to Geoff Wheelwright's excellent article as the need to backup your mobile computer ["Don't keep all your eggs in one hard drive," TOP June].

Of course the best protection against data loss is a good backup, along with a tested restore procedure. It is also true that we often neglect this and sometimes even backups go bad. All is not lost though, even in these situations.

Professional on-site data recovery is available. In fact, the business directory of The Computer Paper shows several service providers of this kind and our company recovers lost data from hundreds of failed notebooks, desktops, servers and laptops every month.

We have published a guide about data loss prevention and data recovery, available for free at our Web site (www.on-site-recovery.com).

Regards, Rüdiger Austin

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WHAT'S NEW

by AFP Staff

Every now and then, a device comes along that is sure to draw a crowd, and this one seems to fit the bill. **PrintBreeds** (www.printbreeds.com) has developed what it calls **PrintBreath**, a handheld printer that lays down text as its user breathes it across the page.



The company says that the device takes into account all thinkable parameters of hand movements, including rotations and speed changes, and produces a printed document very similar to its digital version. It's about the width of a mobile phone and the length of a pen, and it weighs about 350 g. We won't be able to try it out for a while yet—it isn't expected to hit the market until 2005—but we suspect it would be a good idea to stock up on ink before taking it out in public.

Handspring's (www.handspring.com) impending sale to **Palm** (the deal is expected to close this fall) apparently hasn't been too distracting—the company debuted its newest Treo at the

CeBIT America trade show in New York in June, and it was named "best of show" in the wireless and mobile category.



The **Treo 600** series offers an integrated QWERTY keyboard in a case that is smaller and narrower than previous Treo devices, making it more phone-like, according to Handspring. The combined phone and PDA runs on Palm OS 5, offers messaging, email, and Web-browsing on a

colour screen, and has a built-in VGA camera and an expansion slot.

The company is currently working with wireless service providers to customize the device—which can be built to operate on either CDMA or GSM/GPRS networks—for their respective networks and band offerings. The devices are expected to hit store shelves this fall, but start saving now—they'll be the most expensive in the Treo lineup.

If you spend a lot of time wearing a headset in front of your computer for voice chat, online gaming, or speech-recognition applications, wouldn't it be nice to have an option to the ubiquitous boom? How about velvet? **Logitech's** (www.logitech.com) new **Premium USB Headset 300** offers velvet ear pads, plus a few other comfort options, like an adjustable headset and a noise-canceling microphone that can be worn on either the right or the left side. The new **USB Stereo Headset 300** also offers all these



Spotlight

WWDC 2004 is the annual Apple conference, and this year's Apple keynote took place before the iPhone announcement. The keynote was the first time that the **Apple Worldwide Developers Conference** (**WWDC**) was held in San Jose.

The keynote was a surprise for many, as Apple had never before held a keynote at the same location. The keynote was held at the **San Jose Convention Center**, and it was the first time that Apple had held a keynote at the same location. The keynote was held at the **San Jose Convention Center**, and it was the first time that Apple had held a keynote at the same location.

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Navigating the real world

Manufacturers drive development of telematics, in-vehicle wireless communications

By Sharlene Myers

The first cell phones were often installed in cars like taxis, drawing on the vehicle's battery and even using the horn to get the attention of a driver who had wandered away and was missing a call. Only 12 years ago, a visitor to a construction site might be treated to the spectacle of a horn blowing in the parking area, triggering at least three guys to run madly back to their trucks to catch the call, unsure of which truck was calling.

Now that phones are smaller and we keep them in our pockets, there's no need for the mad dash. But there were and still are advantages to having wireless communications built into cars. The integration of wireless communications with the vehicle's information systems and a global positioning system (GPS), called telematics, could make driving safer and more convenient. According to the hype, it could allow us to avoid many of the worst things about driving: traffic jams, bad weather, accidents, breakdowns, getting lost, and the futile search for parking spaces. The dream can be pretty irresistible, but the question is how much we are willing to pay for it.

What's available now

The most prominent option for those looking for telematics in their vehicles right now is the OnStar (www.onstar.com) package offered with many new GM models. OnStar, which must be factory installed, essentially combines a cellular phone, a GPS system, and a network of sensors in the car with a call center subscription service accessed through a set of three buttons. Locked your keys in your car? OnStar can unlock your car for you remotely. Lost your way? The call center operators can give you directions to get you back on track. But what's likely the most appealing to many subscribers are the safety features, including remote diagnosis to tell you if that engine light is signaling a problem serious enough to leave you stranded.

Mike Walsh, marketing coordinator



Photo courtesy, OnStar

telematics manager for OnStar Canada, explains how this works: "If the owner of the vehicle presses the button and requests what we call a remote diagnostic, OnStar can connect to the vehicle but with a data connection instead of voice, and it can read the onboard computer and find out why, for example, that engine light came on." The operator can then look up the diagnostic code and advise the driver whether or not it's safe to keep driving.

A radar also illustrates the airbag notification service. OnStar offers, The spot features a crash, followed by an OnStar operator paging the driver through the system, alerting emergency services to the scene when the beam no reply. The vehicle places an emergency call to OnStar automatically when the airbags are deployed.

According to Walsh, this function will be expanded in future vehicles. Advanced automatic crash notification will be rolled out starting with the 2004 Chevrolet Malibu, incorporating more sensors around the vehicle that will allow OnStar to tell emergency personnel where and how hard the vehicle was hit.

"One of the greatest causes of death from accidents are the argument that [the paramedics] don't see, things like internal bleeding," says Walsh, "and if they knew that they could expect that type of

injury because of the type of accident, they would be much better off."

Essentially, OnStar is like an insurance policy—the most important features are the ones you hope you'll never need. And like an insurance policy, it can be somewhat painful to pay for.

The system itself will add about \$700 to the price of a vehicle and it often comes bundled with other options in a higher end package. The first year of service is included in the package. After that, drivers who wish to continue the service are offered a choice of three plans that range in price from \$24.95 to \$67.95 per month. Those who wish to use the OnStar service for hands-free personal calling can buy packages of prepaid minutes at rates ranging from 38 cents to 67 cents per minute, depending on the number of minutes and how soon they expire.

There is one limitation drivers should be aware of, especially if they do a lot of driving in remote areas. OnStar communicates via cellular phone signals only, so if you're out of cell phone range, you're out of the service's reach. While the GPS will continue to establish the vehicle's location, without a cell signal, there's no way to communicate the data to the call center. Walsh did point out, however, that because the system uses the vehicle's battery, which is stronger than the typical cell phone battery, it will allow driv-

ers to venture farther before dropping the signal.

Other options

There are alternatives to OnStar, though not many, and not usually on lower priced vehicles. Several manufacturers also offer DVD-based satellite navigation systems, but they tend to be available on luxury models, and can add several thousand dollars to the bottom line.

Mercedes-Benz offers Tele Aid, a three-button system very similar to OnStar that comes standard on most of its models. A DVD- and GPS-based navigation system is also available on some models.

BMW offers Assist, which is also similar to OnStar and Tele Aid, but which requires a vehicle with an on-board navigation system and an assumed BMW cellular phone system. The service is priced at \$190 per year.

Lenox offers a DVD-based navigation system on some of its models, usually bundled with premium packages.

DVD- and GPS-based systems use a combination of mapping software, satellite positioning, and a small LCD screen mounted in the dash. Drivers make their destination and receive routing advice from the system, much like having a paper map with the route highlighted. The helpfulness of a DVD-based system largely depends on the quality of the software, so car buyers planning to invest in a system should ask questions about the system covered by the mapping software and try it out if at all possible.

The Pontiac Vibe, for example, has an option to add a DVD GPS navigation system, but the online information includes a caveat that at present, detailed map coverage is only available for Toronto, Montreal, Ottawa, and Vancouver. Considering the system will add about \$2,500 to the price of the vehicle, it's worth taking the time to be sure it will be useful.

What's possible

While the idea of getting quick help after an accident is comforting, avoiding the

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Navigating the real world

Continued from page 12

Accident avoidance would be an even better option. "It's a design that inspires ongoing research at Ford's Research and Advanced Engineering division."

Ken Miller, physicist who graduated from MIT, has been with Ford for eight years. His specialty is intelligent vehicle technologies, and the results of his previous projects won him a car lot before 2000. "The value in telematics, as he sees it, lies in 'real-time traffic and weather reporting,'" and Ford has partnered up with the Departments of Transportation in Massachusetts and Michigan to figure out how to make it work.

Basically, the system involves three steps: data is collected from vehicles as they move through traffic; it's then sent wirelessly to digital messaging signals operated by the transportation department; and then built in vehicles through a cell phone or radio signal as a real-time traffic message.

Miller says Ford is working with Delphi to develop a panel that would fit into vehicles and offer both a wireless wide area network (WAN) and a wireless

LAN. This would move the system away from a server-based system to a more decentralized virtual floating network, in which cars talk directly to each other.

"By having these vehicles talk to each other, real-estate accidents are a thing of the past," says Miller, "because somebody slams their brakes on 500 in up in front of me, I normally don't see that until all the brake lights hit, and then all of a sudden, I have to brake hard. If I knew that ahead of time, I would have slowed down in a non-aggressive manner, and the people around me would slow down in a non-aggressive manner, and we'd stop that collision or shock wave that happens when events occur on the highway. So it changes all the dynamics. It provides sustainable mobility, and it keeps people safe."

Safety is a key message in the discussion around telematics systems, and for good reason: studies have shown that safety issues are the strongest selling point in convincing car buyers to pay for the systems.

A survey released in October by Dyncall-Wolfe Marketing and Research Consulting found that of those driven

with Capital or Tele Aid (offered in Mercedes vehicles) installed who decided to renew the service after the first year, 90 percent cited the emergency notification feature as a motivator. A study by J.D. Power and Associates released in December showed that consumers are more interested in safety-related technologies than they are in features that only add entertainment, comfort, or convenience.

What we need to figure out

But not everyone is convinced that telematics systems make vehicles safer. According to Transport Canada, as telematics become more common, they could make roads more dangerous, even for those without the system installed. A discussion document published in the Canada Gazette in June argues that many of the devices are poorly integrated with the car's system or are too complicated and require a lot of visual attention, possibly distracting drivers to the point of causing accidents. Since the federal government has the power to regulate what is built into new vehicles sold in Canada, it seems Transport Canada

has put the industry on notice that the government is ready to step in and regulate the systems if it doesn't think vehicle manufacturers are doing enough to keep drivers focused on driving.

While the Transport Canada paper alleges that human factors, or the way users interact with the machines, are not adequately considered in the design and implementation of telematics devices in vehicles, Miller points to ongoing and extensive research Ford is doing in the area.

"We've got a tremendous effort in that," says Miller, adding that the company uses a full-motion simulator to test driver interfaces.

"You put people in the simulator, you have different tasks they have to perform, you look at eye glances, lane departure, even small lane departures."

Recognizing that there are any number of things that can affect driver focus, the testing program is not limited to advanced technologies. "It goes all the way down to, how do we set up the interior, not only from the advanced technologies we bring in there," says Miller,

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Navigating the real world

Continued from page 34 —
but also "how for those technologies are [my] reach... and then can I use them and am I affected by regular ambient conditions that are outside of the technology?"

Mike Walsh, of OnStar Canada, is quick to point out that his company's service is free of visual distraction. "There's a big difference between the kind of service that OnStar provides and things like a cell phone or the navigation devices that have a screen," he says. "When OnStar provides directions, for example, there's nothing to look at except the road, and nowhere else to put your hands except on the wheel. So the person talking to you will give you the directions, and they can stay on the line with you as well, or just give you the directions and you can hang up. There's nothing to look at, really."

But visual devices may not be the only offenders. A University of Utah study published in the March issue of the *Journal of Experimental Psychology* found that drivers using cell phones,

even hands-free models, are less able to process visual information due to "multitasking blindness" and react more slowly to traffic signals and changes in the driving environment.

GM claims its own research is based on precise, real-world situations and shows that use of the OnStar system while driving is safe. The company has the advantage of knowing exactly when an OnStar call intersects with a crash serious enough to deploy airbags. In analyzing 8.1 million embedded cell phone calls to OnStar call centre advisors between October 1996 and May 2000, GM found that during only two calls were drivers on the phone at the time of a crash serious enough to deploy the airbags.

The debate is only just beginning. While those in favour of telematics point out that drivers who eat, read, and chat with passengers are also distracted, Transport Canada cautions that while it is not in a position to regulate what drivers can bring into their vehicles with them, it is in a position to regulate what is built into the vehicle and how much of

that equipment is accessible and functional while the vehicle is moving.

What's it worth?

All the dreams, hype, and debated issues may be moot if the industry doesn't manage to find a way to the bottom line: quantify the people really want information in their vehicles, and are they willing to pay the associated costs?

OnStar has been available on 41 models for 2003, and will be expanded to seven more models in the 2004 lineup. But despite the relatively widespread availability, including entry-level models like the Pontiac Sunfire and the Chevrolet Cavalier, the system is only available in about 20 percent of new vehicles driving off GM lots. And of those who have the service, only about 50 percent renew it for the second year, once they have to start paying for the subscription. Subscribers who stick with the service for a second year are more likely to renew for the third year and beyond.

Ford partnered with Qualcomm in October 2000 to form Wingray, a ser-

vice similar to OnStar, but then shuttered the company last year without entering the market.

The few Ford-branded vehicles that offer call centre services now are supplied by a contract with AEX Technologies, a third-party service provider that also works behind the scenes for Mercedes Tele Aid and BMW Assist.

While telematics hasn't expanded as rapidly as some predicted it would a few years ago, it seems that automotive companies have not given up completely. They've refocused, concentrating on finding the magic combination of functions and price that will appeal to their customers. As part of this effort, they've joined forces to form a consortium to establish standards.

The Automotive Multimedia Interface Collaboration (AMIC, at www.amic.org) is made up of most of the world's automotive manufacturers, and aims to establish standards for electronic components in vehicles that will make it lower costs and easier upgrades. □

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Simplifying security

Biometrics offer solution to password proliferation

By Geoff Woodwright

B iometric technology has been with us for many years, on television and in films. And pretty much any body part that you can think of has been used as a way of allowing machines to identify people—from fingerprints, hand, veins and full-body scans to voiceprint analysis.

The downfall of passwords and IDs

So what does all this have to do with you? To answer that question properly, consider the requirements you currently have for establishing your identity in the digital world (and sometimes in the real world) that are based on some form of ID/password scenario. The ID can be something physical (such as a bank card) or merely a set of characters or numbers (such as the ID you might type in at an electronic banking Web site or on a Web mail service at an Internet café). The problem is that these scenarios are not



always secure.

Take, for example, the average corporate user. ID/password combinations that provide access to a company's network, eMail, corporate IDs, are learned in one of several standard ways. The most common is the first letter of your first name and the whole of your last name (i.e.,

Smith for Jane Smith). If you work within a company, or are even familiar with those who do, you know how IDs are formulated and can accurately guess them.

Amazingly, there is little or no security around IDs; the effectiveness of your digital security is the simple ID/password

world is going to depend on how secure your password is. Many people, however, choose their passwords for the sake of convenience. If you know a little about the people whose password you're trying to guess, it sometimes doesn't take much to figure it out.

Here are a few of the more common ones: spouse's name, children's names, pet's name, mother's maiden name, the word "password," the user's own middle name, the ID itself, and so on. The point is that ID/password technology is sometimes not the most effective way to secure your computer or your network.

Password proliferation

As a user, ID/password combinations can be frustrating, considering the number you may have to remember and use in a day, a PIN for your bank/debit card, security codes for your home and/or office alarm systems, separate PINs for accessing cell phone and office voice-

Continued on page 26

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Simplifying security

Continued from page 24

mail, network passwords for your office and home computers, passwords for your e-mail and Web mail clients, the "access" code for your PDA, and on and on.

So what do you do? Write them all down somewhere so you don't forget them or make them all the same so that anyone who guesses the right password can "unlock" your whole life!

Anybody's solution

OK, wouldn't it make sense to be able to eliminate at least some of the ID/password headaches in your life without compromising the security of your personal or business information?

With biometrics, there is nothing to remember. You can't forget your fingerprint, your eyes, or your face. You always have them with you—and should be able to easily produce them when needed. The real issue is whether or not biometric solutions make sense for the average home or small business user.

Biometrics for the home and small office

Do you really need a biometric security solution at your home or in your small business? The answer lies in three words:

security and convenience. The added security comes from knowing that only you—or those people you're selected—can access a biometrically protected system. That security also extends to the mobile environment. If you use a notebook computer or a PDA, there are a growing number of biometric options that allow you to ensure that the work you hold on your mobile system can be kept from hackers and computer thieves.

These solutions can also offer convenience by giving you at least one fewer ID/password combination to remember—freeing up those extra brain cells to remember more important information (such as your spouse's birthday). Only a handful of the wide range of biometric technologies are available to the home and small business PC user, although that number seems to be on the rise.

Common biometric solutions

Here's a breakdown of the most common biometric solutions based on recognizing a body part.

- **Fingerprint recognition:** It's one of those wonderful quirks of nature that no two human fingerprints are identical (perhaps at least until someone breaks the ban on human cloning). This type of system takes a picture of

your fingerprint and compares it to a previously taken picture of your fingerprint to see if it's the same match.

- **Pace recognition:** This technology is more a software marvel than anything else. The hardware is fairly standard camera gear—although it must be said that the better the camera, the more accurate the results are likely to be. Finally, a solution from Massachusetts, Mass.-based Identity, works by looking at the unique geometrical relationships within a list and comparing them to a known image of the individual. Others take a different approach. Massachusetts-based Visage's face-recognition technology, for example, was developed at MIT and uses what it calls "templates," which map characteristics of a person's face into a multi-dimensional "face space."

- **iris recognition:** The major applications so far have been aviation security, automatic border crossing controls, database access, computer login, building entry, ATM's, and government programs.

Quasi-biometric solutions

There are also several quasi-biometric recognition systems that require you to

spell, type, or write something.

- **Voice identification:** Notice that this type of solution is called "voice identification" and not "voice recognition." While voice identification solutions need to recognize specific voices, your goal is to identify the speaker rather than what the speaker is saying. Voice ID solutions allow you to use your voice to give commands to your computer.

- **Handwriting identification:** Again, handwriting identification should be differentiated from handwriting recognition. The latter is designed to figure out what is written, while the former tries to establish the identity of the writer.

- **Keystroke authentication:** There are a few products based on this notion. The best-known is BioPassword from Schwan. Wash.-based NetLibrary Software, which learns the unique way you enter characters using a keyboard. It's based on the idea that "typing rhythm" is individual, so a criminal's will not be the same as a computer's owner.

Putting yourself in the biometric picture

The real key to figuring out which biometric solution is right for you is

Continued on page 33

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ATX Random 12000 10MB/s
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SATA 2 (SATA-600) 2 SATA
SATA6G 12.1 (SATA-600) Random
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Ezraung 1.4GB/s Playpy 6
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Teplech 3000 USB Case
Optical Mouse
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4 **AMC Antenna DVB-D**
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A205 Gelcoflex F 5000
Sony HX DVD-RDM
Plasma A23 DVD-400
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Seymour Miki (Miki) M
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Perthman 4 1.80 \$538
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Activity	NP	Market Size	1990-91
NP	22,000+	92,112	
NP	22,000+	8,154,800	
NP	22,000+	1,000,000	

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Warriors	XP 2888+ Barton
68	XP 2888+ Barton
18	XP 2888+ Barton

5-4 3000
5-4 4000

INTEL P4 3160-42 Barton
Asus P4B266-E Motherboard
 1 GB 100 MHz SDRAM RAM
 Master IDE 20MB/sec IDE
 ATI Radeon 7000 32MB TVQV
 Sony 18X DVD Rom
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 Realtek 10/100MB Ethernet
 300Watt PS Case
 Integrated AC97 Sound
 JTF 180Watt Speaker
 Optical Mouse
 Wides Keyboard

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 Asus GN 4400 4400 RS
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ASUS E6700 Motherboard w/ 8x video
SONY TRX DVD Rom
SONY SDR430 17" CRT Monitor
RAIDSLAVE 160000kb Network G
Soundblaster Live 5.1 S/C
Samsung 1.44MB floppy
Creative Inspire 5.1 Speaker
Microsoft MS Windows XP
Microsoft Internet Explorer

INTEL Pentium 4 Processor
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Dual Channel 512MB DDR
Maxtor 1300 7200rpm HD
MSI 7600 128MB 6X AGP
Box, 16X DVD Rom
Seagate 80GB 7200rpm HD
Sound: 10100444 Harmon
SoundBlaster Audigy 1284
Samsung 1.44MB Floppy
Creative Inspire 5.1 Speaker
Microsoft Wireless Optical
Keyboard and Mouse

Intel Pentium III
450 MHz 533MHz
Sapphire 62MB 32 MB
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ATI Radeon Pro 128MB 64
Barr 184 DVD-RW
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SoundBlaster Audigy 1
Creative Inspire 5.1 Speaker
Samsung 1400Hz Top
Microsoft Optical Mouse
Microsoft Internet Key

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Stealth, smoke, and steel

TCP Lab looks at theft prevention, recovery, and other security solutions

By Dave Chappell

When you hear the term "computer security," you probably think of firewalls and antivirus applications. They are important products—something many of us have learned through experience (and more about these products in archived articles at www.cnet.com/pc/09/).

Computer security also includes theft prevention and recovery for hardware and data. For this Lab, we've broadened our scope to include hardware and software products designed to prevent loss and assist with recovery of stolen hardware or data and to prevent unauthorized access and usage, data corruption, or inadvertent destruction.

The software

PC Phone Home/Mac Phone Home

From: Engadion Software

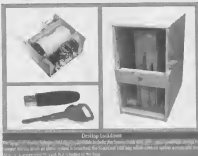
www.pcphonehome.com

Estimated price: US\$29.95

Requires: Mac OS 9 or 10, OS X, Windows

96/Modem/ISP modems (dialup or broadband)
PC Phone Home helps get your stolen computer back. Once the software is installed, it sends an email message every time the computer is connected to the Internet. During setup, the system requires your email address and outgoing mail server name. No email client (email programs or application) is needed. It's OK to use your own email address, just make sure that if you change ISPs, you also change the info listed with PC Phone Home. The ownership information you provide during registration must be accurate if police are to be notified or legal action about providing false information on a warrant.

We used the same email address for sending and receiving, and each time we logged on, an email message appeared in the inbox within seconds. When contacted on another telephone line using another ISP, it took about three minutes to receive the message. Dozens of information reports were sent stealthily with-



Desktop Lockdown
The PC Phone Home software, which sends email notifications, includes the SecureLock USB key, which connects to your system and provides a keypad for PIN access. When the SecureLock USB key is inserted, the system prompts you for a PIN. A keypad for PIN access is located on the SecureLock USB key, which connects to your system and provides a keypad for PIN access.

out any indication to the user that they were being traced.

The email messages from PC Phone Home contained all of the information we provided during registration, plus the IP address, time connected, user name, serial number, and even the only name we forgot we'd given the computer when we first installed the operating system.

As PC Phone Home requires email to work, you might think formatting the hard drive or deleting the partition would wipe out the program. Wrong! It remains hidden as a system, phantom partition disguised as a bad sector. Even if that is deleted, several key files spawn on reboot. Format and Fdisk commands don't work if the program is properly installed. Registered users can, however, request a special uninstall program to remove PC Phone Home. The company reports that all 31 computers registered with PC Phone Home that have been stolen so far in 2003 have been returned. None were tampered with, reformatted, or re-partitioned.

The user's manual describes a technique to slow down a thief: make your C:\ drive the first boot device in your

system, and password-protect your BIOS settings. This prevents someone from using a floppy or CD to boot around the protection (many systems now ship with the CD-ROM drive as the first boot option), and then readily changing the boot-device order. It is possible to work around this protection, but it's most likely that many thefts will be sent before PC Phone Home is detected.

We experienced one mildly annoying event: When not connected online, the dial-up networking adapter kept trying to dial a connection immediately after we booted up the computer. After leaving our computer running all night, we found dozens of dial-up attempts on our taskbar—so many that we couldn't close them, and were forced to reboot. By experimenting, we learned that simply doing the first two automatic dial-up attempts solved the problem. Note: If the program is configured for use with broadband, this should not occur.

A full version of the software can be downloaded from the PC Phone Home Web site, as can a free 30-day trial version for those who want to try before they buy. Enterprise versions are also available for organizations with several

computers. PC Phone Home has no monitoring fees or other costs.

SecureLock

From: SecureSoft, www.securesoft.com

Estimated price: \$99 (1 key), \$179 (2 keys)

Requires: Windows 2000/XP, 1 MB disk space

A loss prevention device, SecureLock is a USB keysoftware solution for Windows 2000 and XP. (Note: key in photo indicates scale and is not part of SecureLock system.) When inserted into a USB port on your system, it performs user login authentication, file encryption, and storage for all of your passwords and login profiles. It can store this type of information for several users on the same system.

If the "key" is removed from the USB port, you will be prompted to insert it when you boot the computer. If you insert it before turning on the system, or did not remove it when you last shut down the computer, you'll be prompted to type in the PIN you selected during setup. The computer can't be accessed at all without the SecureLock USB key. As well, SecureLock blocks access after three incorrect PIN attempts. At that point, only an administrator can unlock it. Of course, if you've installed SecureLock on a stand-alone system that only you use, you are the administrator.

Right-click on a file icon to encrypt it with either RC4 or Blowfish algorithm encryption. While it provides stronger encryption, Blowfish increases the size of files, so RC4 is recommended for large files.

Right-clicking also offers the option of locking a file for transfer on floppy disk or by email, or making it self-encrypting. Simply right-click, select the encryption or lock you want, and choose a password. To read the file, the recipient must also know the password.

The Simple Sign-On (SSO) feature allows you to store all your login names and passwords in one encrypted location. Each identity is stored under an icon with individual names. When you go to a Web site that requires a login,

simply drag and drop the appropriate icon onto the Web page and click to enter rather than typing in a name and password.

Unlike some USB keys, SecureLock is externally shielded to protect it from static electricity damage.

Kroll OnTrack Easy Recovery Lite

From: Kroll OnTrack, Inc.
www.ontrack.com/kroll-ontrack/
Phone: 508-436-5199 (Data Recovery), 508-436-5199 (File Repair)
Requires: 4MB or later CPU, 150 MB free space
Kroll OnTrack Easy Recovery lets you try your hand at recovering data lost due to corruption by viruses, accidental deletion, or drive failure. Easy Recovery probably won't cause a sudden decrease in business at professional data recovery labs—which OnTrack acknowledges by placing a Crisis Centre icon on your desktop during installation, with a direct link to its lab and other servers.

For our tests, we downloaded a version of Easy Recovery Lite (the 26.6 MB file requires 2.5 hours to download at 33.6 Kbps). Through an easy-to-use Windows interface, the program offers data recovery and file repair, and is subdivided into recovery from various events. Depending on what caused your data loss, you can choose Formatted, Deleted, Virus, Standard, and Raw data recovery. Separate sections exist for repairing damaged Word and Zip files. Straightforward instructions are at the top of each window. You can also use Easy Recovery Lite to make an emergency boot disk.

To recover a file, you must have two disks, a "bad" one with the damaged file, and a "good" one that Easy Recovery can write to. If not, you're greatly reminded, "The destination path you have chosen is on the source partition. Please select a different destination."

We recovered both formatted and deleted files. Then we deleted and formatted again, and pressed the reset button on the system during a recovery, just to scramble things a bit. Using the Raw recovery function, which is reserved for the most extreme cases, our 400 KB Word file was fully restored, albeit with a different name. A small price to pay for what would have been lost otherwise. We'd love to say "we" recovered the data,

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¹The Computer Paper, March, 2005



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*CPI based on ISO/IEC 24790 standard. **Estimated street price as of 10/10/05. Prices are subject to change without notice. © 2005 Lexmark International, Inc. All rights reserved. Lexmark, the Lexmark logo, and the Lexmark C720 are trademarks of Lexmark International, Inc. in the U.S. and other countries.

LEXMARK

Continued on page 32

DEPCON Authenticator (available from the Tagus site at www.tagus.com), which comes in either USB (\$119) or PC Card (\$199) versions. One nice touch in the USB version is that a two-port USB hub at incorporation within it—ensuring that you not only get extra security, you get an additional USB port.



Conclusion

In many ways, the commercialization of biometric technology is still very much in its infancy. A number of innovative biometric companies have recently been acquired, gone through mergers or struggled to gain further financing. Others have largely abandoned the retail market to focus on higher-priced solutions for industry or government.


At the same time, companies such as Florida-based Authentec have started supplying fingerprint identification solutions to computer manufacturers for as little as 16 per unit, making it a relatively low cost add-on to a mid-range notebook or desktop computer.

As demand grows—and competition in the struggling PC industry continues to intensify—it's likely that some form of biometric security will become common on many mid-range and higher-end systems. Over time, it may even become a standard feature on entry-level systems. And it is certainly looking like it will have strong appeal on more "personal" digital devices, such as mobile phones and PDAs.

So our final word of advice on looking for a biometric solution is: resist temptation. You would do well to buy from a more well-known supplier, and, if you are planning to buy a new system in six months to a year anyway, think about waiting until then and buying a solution that has businesses built-in. ■

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Continued from page 29
but all we did was read and follow some instructions. Easy Recovery did the work. A free trial version of the software can be downloaded from the Kroll OnTrack Web site.

Effiliter 3.0

From: SpecterSoft Corp., www.effiliter.com
Estimated price: US\$149.95, US\$29.95 (no trial)
For monitoring unattended computer use, Effiliter is personal software that generates detailed reports about the computer on which it's installed. Whenever that computer is used to access the Internet, a report is emailed to you, in intervals of your choice, from every 30 minutes to every 24 hours.

Select the online activities you want reported to you from the Effiliter Control Panel. Computer names, user logs, IP addresses, browser summary, applications used, Web sites and chat rooms visited, keystrokes typed, and the mouseover type are all included. If you set a Keyword Alert and that word comes up in an application, email, chat, or

forum discussion, you'll know. In 30 minutes you can have individual keystrokes, nullifying your subject's password protection.

When specifying where you want the reports sent, keep in mind that open filters on many email servers prevent you from saving HTML mail. Choose the plain text report option for instant notification and work to view the full report later on the subject computer. At any time you may test the reporting functions. Reports are sent to you with a bogus reply address, preventing a report from returning to the subject computer and possibly alarming the user.

There are no signs anywhere that Effiliter is installed on a computer. It doesn't appear in the program list or uninstall software. Few users are aware of the existence of the Windows Registry, but we looked thoroughly and found nothing: It has to be in there somewhere, but Effiliter hides very well. Shouldn't your anti-virus program block an Effiliter installation? SpecterSoft says McAfee and Norton anti-virus programs won't stop even a

remote installation of Effiliter, because the file is not a virus. GenuSoft AVG was installed on our test system, yet Effiliter bypassed right past it.

Our tests seem to indicate one or two known Windows exploits (security holes) are used to send the keyword alerts. Chat and messaging programs also have well-known exploits, which might also be used to send reports without a user's knowledge.

Two separate spyware detection applications couldn't detect Effiliter. Removing a known Microsoft Internet Explorer exploit disabled the Effiliter keyword reporting function, yet all other spying and reporting functions still worked. The verification provided makes worried parents and employees almost users of Effiliter. However, SpecterSoft literature avoids mentioning that annoying spousal demand for the largest portion of Effiliter purchases.

The hardware

The Wrap

Join: Secure Solutions, www.securesolutions.ca, 416-912-5142, 888-430-9410

Free test: installation (\$0/\$50) (Wap)

\$49/\$49 (Cover Wap)

Note: Additional charge for installation outside Greater Toronto Area.

Dimensions (in) height width depth
The Wrap internal 52 429 51-4-1/2
Max. PC size 46.5 28.8 16-4-1/2

Screen Wap external 56.2 35.6 98.2 (not in Max. PC size)

Max. PC size 50.6 31.1 32.2 (in)

One look at this made-in-Canada 16-gauge steel "computer safe," which is attached to the floor, will send a shiver looking for your cashbox or jewelry. Without a key, your computer will be destroyed before it ever comes out of this box.

Adjustable front and rear end flanges can be locked in position out of the way, or placed to prevent access to drive bays and card interfaces. The 1/2-inch rod pin locking mechanism with key cylinder lock is mounted on the front bar. Keyed-dialer locks are also available for lockouts with multiple sites, such as a business, server room, or home with more than one computer.

The Wap is shipped unassembled for

Continued on page 34

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Smoke, smoke, and steel

Continued from page 32

compactness (four can be shipped in the space of one standard unit).

While relatively easy to install, the screws for assembling the Wrap are cross-threaded to discourage, if not prevent, removal once installed. The screw heads require an uncommon drive, which prevents anyone from taking it apart with a common slotted Philips, or Robertson screwdriver.

Anchoring the Wrap is slightly more complicated than drilling into your concrete floor (over 90 percent of the Wrap installations are on concrete) with a masonry bit and Tapcon (typical hardware-store masonry screws). Unless you're experienced in concrete drilling and mounting, pay a little extra for installation. (Your insurance company may limit on professional installation.) If you have a wood floor, special mounting adapters are available that prevent a sharp with a cowboy or lever from simply prying up the entire package.

Smoke Clock

From: Martin Security Smoke

www.martinsmoke.com

Price: from \$1,000 (estimated outdoor)

This low-pressure release system spouts a "zero dollar flow" second, according to its manufacturer: nothing has ever been stolen from locations—where you get the globe—where Smoke Clock has been installed.

Smoke Clock connects to existing security systems, so installations are customized for each location, with fire and police departments notified. It includes a separate battery so it works even in event of power failure at the location.

When the security system is breached, the Smoke Clock quickly distributes smoke it has generated from distilled water and pharmaceutical and food-grade triethylene glycols, which won't harm those caught in the room with the smoke (though serious asthma might disagree). Unlike chemical smoke, it leaves no residue. Smoke ports

are one micron in size and non-buoyant. A "clock sensor" measures the smoke level after the first "ding," producing more for half the duration if needed.

As a room fills rapidly with Smoke Clock-generated smoke, thieves typically retreat by running from the "fire," according to the company. We witnessed a 190 sq. ft. room fill completely in under 15 seconds.

With an additional 7.5 second blast, we couldn't see anything. With smoke from a fire, the air is clearer if you get close to the floor—not to be sure. Even on the floor, you can't see your hand until it touches your nose. It's an eerie feeling, an exit door and fresh air is only about a meter away, yet you're aware of its direction.

Smoke Clock backs up its reputation with money: public liability and damage (less insurance) of up to \$20 million on unoccupied premises. The exception is first-page output from copiers and print-

ers, as the glycol on the drums could cause a bit of smoldering on the first page. As well, external smoke detectors are affixed by this smoke, as have to be replaced (about \$30 each) in the event that the Smoke Clock is used.

The level of the fluid used to make the smoke is monitored by the alarm monitoring station. The sensors shut down the pumps to save them in event of fluid depletion. Because the fluids evaporate at different rates, a increased evaporation sensor serves the system once a year.

Initially designed for banks and jewelry stores, this device now protects server rooms, labs, and other rooms used to house a lot of expensive equipment. Some home versions are installed near the main hall, activated by a panic button in the master bedroom.

Smoke Clock renders any exterior window bars obsolete. Next time you pass an unheated building in a shady area, you might be passing a Smoke Clock location.

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Kids in driver's seat of new wireless technologies

By Jeff Evans

About a year ago, I went to a Toronto mobile banking on short messaging services (SMS), a wireless data technology that lets cell phone users send and receive short text messages. A presentation showed how widely popular SMS was in Japan and Europe, and how the Canadian telcos were finally getting their act together to make this overgrown cell phone "interoperable," allowing Canadian wireless phone users to communicate digital info with each other.

Now, interoperable is good, and I didn't think much about it after that.

Then, this spring, I began to notice an odd new behaviour among many of my kids' high school and college age friends. They'd be talking with each other, then one would stop pull out his or her cell phone, silently read something on the phone's screen, and tap in a quick reply.



Photo source: Motorola

They were using SMS, constantly, and as easily as they talked.

I asked around, and was told candidly that "everyone" with a cell phone was using SMS. Except me, evidently.

I talked with a couple of Canadian wireless industry experts, Todd Beaman, director of enterprise and mobile applications for Ericsson Canada (www.ericsson.ca), and David Neale, vice president of new product development at Rogers AT&T Wireless Communications, to find out what had happened to the technology and the market in the last six months.

Both Beaman and Neale, as it turned out, were very interested in what Canadian kids were doing with SMS. It turns out that there are two user groups driving much of the progress of wireless voice and data technologies around the world.

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A healthy perspective

By Sean Carruthers

Microcentrality has become a part of pretty much every aspect of our daily lives, from cell phones to portable digital audio players, to navigation systems for our cars. The ongoing miniaturization of the technology is also helping people stay on top of their own health, right at home. We had a chance to look at a few new gadgets that will help you stay healthy

According to the Canadian Diabetes Association, over two million Canadians have diabetes, whether they know it or not. For people who are interested in taking control over regulating and monitoring their blood glucose, computerized monitoring technology is available in the palm of your hand. There are a number of palm-sized monitoring devices available from a handful of companies; we looked at the OneTouch UltraGuard from Lifescan.



From: LifeScan Canada Ltd., www.breasttouch.ca
Estimated value: \$60



The package comes with the glucose meter itself, a device that's a touch smaller than a deck of cards, as well as a sampler that holds a lancet on the end of a spring-loaded trigger. You stick a new strip into the slot on the top of the meter, use the sampler to obtain a blood droplet from either your forearm or

However, you then apply the droplet to the end of the test strip, which is sticking out of the meter. The blood is sucked into the inner case of the strip, where it reacts with a small zap of electricity, and in about five seconds, the meter goes up a notch.

What's nice about a monitoring system like this is that it allows you to add comments to results you take, including the food you've eaten, how you're feeling, and any exercise you've done.

As the blood glucose result is entered, the system is designed to display warnings or suggestions as appropriate—if your glucose is dangerously high or low, it will display a large warning on the LCD screen saying so, or if it's on the verge of it may just recommend a snack. Also, along the bottom of the device are specific buttons to allow you to enter data at any time about exercise, general health, medications taken, and trends over time. All of that allows you to better

Track your blood glucose levels and how they react to various daily occurrences. The meter allows you to view the information either as log form or as a graph on chart.

The OneTouch UltraSmart comes with a built-in, so-called soft-shell case with a belt loop, so you can always have the kit handy, even when you're at work, home, or out on a walk. Two AAAA batteries are included, as is a 30-pack of laser lenses. Extra slide strips aren't included in the box, as making so many slides separately would be too expensive. Also sold separately is a serial cable interface that allows you to connect the meter to your computer, as well as OneTouch Management Software for your Windows PC. Note: The retail price of the OneTouch UltraSmart is \$99, but there are incentives available through qualified health professionals, which can bring the price of the unit down to as low as \$29. Ask your DPC or doctor for more information.

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**Centros Infrared Ear Thermometer
Centros Blood Pressure Monitor**

From InterTR Canada, www.intertr.ca
Distributed price: \$49 (thermometer), \$49 (blood pressure monitor)

Taking control of your health at home doesn't necessarily mean drawing and testing your own blood—there are always the basics, and ways to make them even easier. Radio Shack's Centros brand now features two new products to do just that.

The Infrared Ear Thermometer looks almost like a tube of toothpaste, but with an LCD on one side and an infrared sensor on the tip. When you press the scan button on the side, the infrared sensor takes 312 readings within one second to determine your temperature. When done, the LCD shows your temperature along with a small face to emphasize how you're doing: a smiling face if you're within a normal range, and a unhappy face if you're running a fever. A memory setting allows you to store 10 readings. The unit is powered by a single CR3312 watch-sized battery, and comes with a protective case for storage.



Centros also offers a new Blood Pressure Monitor, which you fasten to your wrist using an inflatable velcro strap. All you have to do is make sure the back of the unit is properly positioned over your wrist's pulse point, press the button, and let it do its work. It inflates automatically, and takes your blood pressure and pulse so it deflates (for the record, mine is a touch higher than it should be, maybe I should take some time off).

It uses two AAA batteries (not included), which are a bit tough to install, but not impossible. The whole thing is stored in a reasonably small plastic case when not in use. ☐

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Plus! audio tools excellent, but video, photo utilities fall short

By Erno Tovesend

Microsoft claims that its Plus! Digital Media Edition is "the all-in-one music, photo, movie, and movie enhancement pack for Windows XP," but that's a little off the mark. The photo and movie enhancements amount to Plus! Photo Story, which rather lamely helps you unleash your inner Ken Burns; 50 new effects and transitions for Movie Maker 2; and an easy way to transfer media to Pocket PCs. Ultimate? Hardly.



From Microsoft, www.microsoft.com

Price: \$34.99

System requirements: Windows XP

Microsoft would have done well to scrap the photo and movie aspect and call this collection of Windows XP add-ons Plus! Digital Music Edition. Like the original Windows 95 Plus! pack, the programs are at times useful, occasionally and frivolous—but if your main concern is digital music, and you don't need helping Microsoft's Windows Media Audio (WMA) suite further gains on the MP3 format, the emphasis is on "useful."

My two favorite programs in the bundle are Plus! Analog Recorder and Plus! Audio Converter. (In fact, all of the included programs are "Plus!" something or other.) I won't bother mentioning it again, I promise.)

Analog Recorder turns your tapes and records into digital audio files—something other programs have been doing for years, but never with this kind of simplic-

ity and elegance. After plugging your tape deck or amplifier into your sound card, Analog Recorder asks you to play one of the louder segments of the music you intend to record; it uses this to automatically set the highest recording level it can get away with using without distortion. Then it's just a matter of clicking Record and playing your tape or record. When you're done recording, the program breaks everything up into separate tracks (you can recombine or further split them if necessary). All you have to do is apply pop and hiss reduction, if you're so inclined, and provide data like track names, album titles, and artist. The pop and hiss filters are very simple—each one is either on or off—but they work well with most source material. If you're finicky, you'll need to stick with more advanced software.

Audio Converter doesn't do anything new, either—its sole purpose in life is to convert existing audio files to WMA. You could do the same thing with Microsoft's free Windows Media Encoder utility, but that's really geared for people who need fine control over their settings, want to create streaming media, or don't mind doing a little scripting to handle multiple audio and video files. Audio Converter's spare but clear GUI enables anyone to easily convert whole folders of audio files to WMA with just a few mouse clicks.

The two other programs in the "useful" category are Alarm Clock and CD Label Maker, but both are flawed. Alarm Clock is a Windows taskbar icon, only with music from your collection instead of a radio station. You can set an alarm to repeat, increase in volume over time, or recognize a key as a "wake-up" option (which implies that your computer is a little too close to your bed). All of this is fine, but if you exit and restart Windows, Alarm Clock doesn't restart with it—unless you have the presence of mind to go into the options and make sure it does.

CD Label Maker does what its name says, using playlists to generate a list of song titles. It's pretty straightforward, but

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◀ HANDS ON ▶

Final audio tools essential...

Continued from page 44

no matter what you do. It won't print those song titles on a CD label, only as jewel case inserts.

Dance: Fits somewhere between the "Invisible" and "quasireasonable" categories: small digitized dancers shake their groove things on the lower-left corner of your screen, getting funky to whatever you've got playing. The dancers are mildly entertaining, but their moves aren't always quite in time with the music, which can be jarring. You can still have fun with them, though—watching the b-boy Wade pepping and locking to the thoroughly undanceable *Ghost in the Shell* soundtrack was almost hypnotic. And watching the perky Ben dance (in a style that could only be called groovy white gay) to anything is a riot.

Then there's the Party Mode for Windows Media Player, which provides full-screen skins for Windows Media Player 9 and a few extra functions. The idea is that during a party, people can modify the playlist or add messages that will scroll on the screen, but they'll be locked out from the rest of the computer's files and functions. As someone who's handled party music responsibilities from the days of spinning vinyl, I can appreciate Party Mode's ease of use, but I have to wonder why none of the skins would allow me to display Windows Media Player's visualizations—the perfect party eye-candy—at full-screen resolution. For that matter, Microsoft dropped the ball by not allowing the Dancers to tap anywhere during Party Mode. That would be some silly fun.

One notable aspect of Final Digital Media Edition is that Microsoft seems to have learned the value of subtlety. All of these programs happily read and work with MP3 and WAV files, as well as WMA. Even the Dancers don't mind working with RealOne Player, WinAmp, or whatever you use to play digital music. But if you want to encode music or take advantage of volume leveling for playback, you're limited to the Windows Media Audio 9 Series format. You can decide for yourself if that's a price you're willing to pay for a VHS to Microsoft's Parkytown. □

Two years after the fact, I'm fascinated (emo@jpubs.com) is still playing like it's 1999

Working on scenarios in Excel



Spreadsheets are great at answering "what-if" questions: design a worksheet in which you change a couple of numbers and it will show you the results of those changes. Spreadsheets are also a handy way to manage the results of a scenario, allowing you to easily switch between sets of data and compare results side by side.

Enter Excel's scenario manager. This tool lets you save the sets of data you type in cells of a worksheet model and easily restore them rather than entering them again. It can also be used to create summaries for the scenarios you're testing, allowing you to compare both the data and results side by side.

This month I'll show you how to use the scenario manager to compare various savings goals, so you can see how the final amount varies widely depending on a number of scenarios. We'll create a very simple worksheet for use with the scenario manager that will also be a fairly functional worksheet model.

The savings planner will calculate the amount you save over a period of time based on an initial deposit and either periodic payments.

The basic calculator

To create this worksheet model, open a new Excel file and enter the following data into the cells shown:

Cell	Data
B3	Initial amount deposited
B4	Additional monthly deposits
B5	Interest Rate
B6	Years to save
B8	Total Amount Saved

C4: =500
C4: 100
C4: 04
C4: 10
C8: =FV(interest_rate/12, Years_to_save*12, Additional_Monthly_deposits, Initial_amount_deposited)

The formula in cell C8 calculates the amount you'll have saved at the end of 10 years if you invest \$2,500 now and add another \$100 every month, earning four percent annual interest (calculated monthly). The negative amounts in the formula are used because you are making payments out.

The result for this savings scenario is \$38,432.05. You will need to format cells C3, C4, and C8 to display currency and cell C5 to display percentages.

Naming cells

Make it easier to read and interpret results by naming the cells containing the variable information: i.e., cells C3 through C8. You will change the values in cells C3 through C6 to test results in cell C8. To name the cells, highlight the block of cells from B3 through C6, click Insert, Name, Create, select the Left Column checkbox, and click OK. Repeat this process to name cell C8, selecting cells B* and C8, then clicking Insert, Name, Create, etc.

The result will be that each cell in column C that contains data will be named, using the headings opposite the cell in column B. If you select cell C4, for example, the name in the formula bar will be Additional_monthly_deposits. Using the Name, Create feature to name cells replaces any spaces in the name with an underscore. Naming cells in this way allows you to refer to them by their names rather than cell references. So, cell C8 becomes Interest_rate, making it easier to identify its contents. In fact you see, if you wish, replace the formula in cell C8 with this formula:

=FV(interest_rate/12, Years_to_save*12, Additional_Monthly_deposits, Initial_amount_deposited)

The scenario manager doesn't require you to name the cells, but it is recommended because these names (rather than cell references) are used as headings in the scenario report.

Create a scenario

You can now run a what-if analysis on this worksheet. For example, check to see what would happen if you could get five percent interest instead of four or if your initial deposit was \$3,000 instead of \$2,500. To do this, change the figure in cell C3 to .05 (which is five percent) or alter the figure in cell C3 to \$3,000.

As you start playing with the data, you'll want to save your changes and the subsequent results using the scenario manager. To do this, begin by putting the data back to the way it was when you first created the worksheet. Select cells C3 through C6, click Tools, Save Scenarios, and click Add.

The first scenario will be the original data, so in the Scenario Name area type Original plan and check that the Changing Cells area contains the reference C3:C6. Click OK. In the Scenario Values dialogue, make sure the following appear in the list from top to bottom (after them if needed): 2500, 100, .04, and 10. Click OK.

The Scenario Manager dialogue will appear again with your first scenario appearing in the list under the name Original Plan. Add another scenario by clicking Add. Type the name of this scenario as 1000 more savings and click OK. This time you'll set the scenario of investing \$5,000, so make sure the following appear in the list from top to bottom (after them if required): 5000, 100, .04, and 10. Click OK.



Use the Scenario Manager dialogue to enter data and name scenarios in your worksheet.

Add a third scenario called 5% interest rate in which the interest rate is five percent. This time the settings will read (top to bottom): 2500, 100, .05, and 10. Click OK to add this scenario.

One final scenario will allow you to compare the results of making monthly payments of \$110. Add this scenario, calling it 500 deposit, and set the variables to 2500, 110, .04, and 10. Click OK.

Back in the Scenario Manager dialogue click Go to edit the Scenario Manager dialogue and save your worksheet calling it savings plan.xls.

Viewing a scenario

To view a scenario, display the Scenario Manager dialogue by clicking Tools, Scenarios, select the scenario you want to display from the list, and click the Show button. The worksheet will change momentarily to show the results of the scenario you've chosen. If necessary, move the Scenario Manager dialogue to an unused part of the screen by dragging its title bar so you can see the results of applying the scenario to the worksheet model.

If you use the Scenario Manager a lot, you can make it even easier to view your

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Working on scenarios in Excel

Continued from page 32...

different scenarios by adding a Scenario dropdown list to your toolbar. To do this, click View, Toolbars, Customize, and click the Commands tab. From the Categories list, click Tools, and from the Command list, scroll down to locate the Scenario dropdown list. With your mouse, drag this out of the dialogue and up and onto one of your visible toolbars. Let go and the dropdown list box will appear on the toolbar. Click Close to exit the Customize dialogue.

Now you can view the results of applying one of the scenarios to your worksheet by choosing the scenario name from the Scenario dropdown list. If necessary, you can edit a scenario from the Scenario Manager dialogue to change the figures it applies to your worksheet.

To do this, click Tools, Scenarios, and click the scenario you want to alter. Click Edit and OK, and you can change the figures in the dialogue to your new choices. Click OK then Close to Finish. Notice that when you edit a scenario, the original version changes permanently. If you really want a different, additional scenario instead, use Add rather than Edit. Only use Edit when you really want to discard

the original data.

You can also add new scenarios using your new Scenario dropdown list on your toolbar. To see how this is done, alter the worksheet to reflect the data, and the Scenario dropdown list to 04, and 10. This will test the scenario in which you double your weekly investment. To add this as a scenario, highlight cell C3 to C6, click the Scenario dropdown list and type Double monthly payments, and press Enter. You'll now see that the new scenario appears in the dropdown with the other scenarios you created using the Scenario Manager dialogue. View it as you would any other scenario by clicking its name.

Create a scenario summary

The scenario manager is a handy tool for managing multiple scenarios. You can store data in it and, when you select a scenario to view, the tool will replace the current worksheet values with those it has stored for that scenario. Scenarios are saved with your worksheet so they'll always be available for viewing and printing.

It is also possible to summarize your scenario into a handy table so you can compare the results of each scenario side by side. To create a summary worksheet,

click Tools, Scenarios, and click the Summary button. From the Scenario Summary dialogue, click the Scenario Summary option and ensure the entry in the Result Cells area is C8 (or total Amount saved). The results cell contains the figure you're interested in seeing—the amount we will have saved if we apply these figures to our model. Click OK to continue.

A new worksheet will appear in your workbook containing the scenario summary report. This is a horizontal table that is already formatted nicely in Outline form. Click the "+" (plus) and "-" (minus) buttons along the top and left of the worksheet to collapse or expand different parts of the summary to show more or less of your data. Each of the scenarios you create, as well as the values in the worksheet at the time you created the scenario report, will be displayed. Notice that the cell names you assigned earlier have been used as the row headings, so the information is easy to understand.

You can print this worksheet as you would any other Excel worksheet and even generate a chart from the results. To do this, drag over cells D10 to D13 or E12 to E13 if the first column contains data from a scenario that appears elsewhere in the

table), then hold the Control key as you drag over cells D11 to D13 (or E11 to E13). Click the Chart Wizard button on the toolbar and step through the process of creating a chart from the data. The chart will show the final savings for each scenario.



Creating a chart from the scenario summary table is a very quick process.

As you can see, scenarios can be an important and useful addition to your Excel toolkit. Once you understand them, you'll find plenty of ways you can use scenarios to analyze data, from calculating savings plans and mortgage repayments to cost and production situations. ◀ Helen Bradley specializes in writing how-to books, her columns appear regularly in a number of publications in Australia, the U.K., and the U.S. Contact Helen at helen@helenbradley.com

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< NEW & NOTABLE >

WHAT'S NEW

Continued from page 18

Version 7 is so over AOL has announced the release of AOL 8, the latest version of its online service, with new features the company says its users were asking for. The new version offers users an enhanced sending function to help prioritize their email, and email attachment scanning from McAfee to reduce the threat of viruses. A new AOL Companion feature stays on the desktop to immediately alert users to email and instant messages, and offers one-click access to functions like Search and Favorites.

The company has also added AOL Entertainment Films, a service the company says will offer members exclusive first access to movie clips, clips from new TV shows, as well as premieres of new songs and music videos. Current members can upgrade by entering "upgrade" in the AOL keyword box. New members can download the software from www.aol.com/entertainment.

If you've been spending your cash on gadgets with built-in Bluetooth connectivity, but would rather not dig any deeper to buy a Bluetooth-enabled PC



is left to them, here's another idea. Smart Modular Technologies (www.smartmod.com) is offering a Bluetooth-enabled USB adapter that the company says will add Bluetooth functionality to the PC and will allow users to create a piconet—a network of up to eight Bluetooth-enabled devices. The adapter is compliant with Bluetooth 1.1 and USB 1.1, and carries a suggested retail price of US\$34.99.

Continued on page 80



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Microsoft

Final Cut Pro 4's simple, versatile Soundtrack impresses



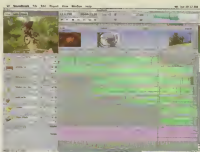
When Final Cut Pro 4 was released at 4 p.m. on June 14, there were parties at most Apple stores across the country. We attended one such event and had a chance to play around

with the new version. We came away very impressed, especially with the new Soundtrack program.

Soundtrack is an easy-to-use program that allows you to build soundtracks for your movies using hundreds of built-in samples and loops. You select the category you want from the ribbon, choose a clip, then drag it onto the timeline. In the timeline you can see all the layers of audio you are mixing, and can control the in and out points of each. We watched customers playing with Soundtrack, and quickly imitated they were creating simple, catchy compositions. Soundtrack will truly help novice editors give their projects a professional edge with their own compositions.

The other big new feature, which we also tried out, was LiveType. The built-in effects include some wild fonts, animated type effects and backdrops, and it's very easy to create a complex animated title in a short time.

Both LiveType and Soundtrack are significant from the new Final Cut interface, and you can choose to install just the components you want. While the learning curve for both programs is steep, the requirements are quite cheap. Final Cut Pro 4 ships on four DVDs, one each for Final Cut and Soundtrack, and two for



LiveType. We saw it demo'd on a single-1 GHz G4 Power, and it seemed to run well, although the machine only had 256 MB of RAM, which simply isn't enough for many of the real-time effects. We're looking forward to seeing the new DVD Studio Pro 2.0 and trying out the integration between the two packages.

Final Cut Pro 4.0 is available now for \$1,699. DVD Studio Pro 2.0 will be available in August for \$729.

Price drops on all Apple laptops

Once again, Apple has announced an unexpected price drop, this time for its laptop lines. It's good news for consumers and retailers alike, and laptop sales have seen a big boost in the past few weeks. There are several reasons for the drops, the first being the fluctuation in the

Canadian/U.S. dollar exchange rate. The recent rise in the value of the loonie has been so drastic that the difference on some machines was more than \$100 between the U.S. and Canadian Apple stores.

The other reason for the drop, though, is the imminent release of a new 15.4-inch PowerBook G4 (renamed Aluminum). Although there has been much talk about a refresh to the 15-inch PowerBook since the 12-inch and 17-inch models debuted in January, it hasn't happened, in part because there was still plenty of stock in the channel. With price drops of up to \$800 on some models, it won't be long now before Apple has sold most of its stock of PowerBooks, making summer the perfect time to refresh the line.

We expect to see the Aluminum 15-inch G4 launch with features similar to the current 17-inch PowerBook, and both the 12-inch and 12-inch PowerBooks to get slight speed bumps and bag fixes. In the meantime, now is a great time to get a deal on a PowerBook. The price changes are as follows.

Model	CPU	Drive type	Old price	New
PowerBook				
12-inch	667 MHz Core2	CD/DVD	\$2,099	
12.1S				
12-inch	667 MHz SuperDrive	CD/DVD	\$2,199	
12.1S				
12-inch	667 MHz Core2	SuperDrive	\$2,499	
12.1S				
12-inch	1 GHz	SuperDrive	\$4,499	
12.1S				
12-inch	1 GHz	SuperDrive	\$5,299	
12.1S				

There are a few important changes to note in the new pricing, particularly concerning the 12-inch model. It is now priced more like an iBook, which is a good thing considering its specs are more like a PowerBook. If the next evolution of 12-inch G4 includes Level-1 cache, a DVD port, and Intel's 800 MHz, it should end back up in price as a compact PowerBook. With its current feature set, the new price seems right when compared with a 900 MHz 12-inch iBook. Also, the 15-inch PowerBooks are the cheapest they've ever been, with the top-of-the-line model available for well under \$4,000. They got the steepest price cuts because they are the most outdated model, but if you don't need Bluetooth, Airport, Extreme, or FireWire 800, a 5 GHz PowerBook 15-inch is a great machine. The model that replaces it in the revamped lineup is bound to be \$4,500 to \$5,000.

Continued on page 38

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PLATFORM NEWS

Fuel on Pre's single...

Continued from page 10

Changes to the ebook line were less drastic, although still signifying as they come less than a month after this generation of the Canon started to ship. Here are the new Canon book prices for iBooks:

Model	CPU	Device type	MSRP	Price
Model	Intel Pentium 4	15.1" LCD	\$1,499	
Model	Intel Pentium 4	15.1" LCD	\$1,499	
Model	Intel Pentium 4	15.1" LCD	\$1,499	
Model	Intel Pentium 4	15.1" LCD	\$1,499	

These price drops are almost entirely due to the currency fluctuations, as the new iBooks were selling fairly. It's interesting that the new difference in price between a 14-inch iBook and a 12-inch iBook is only \$200. Considering that they have the same screen resolution, and the iBook is a sticker looking, we'll be surprised if this move didn't hurt sales of the 14-inch iBook.

We don't think these recent drops point to any new iBook models—Apple is likely to update the iBook line over the summer but leave the iBooks the same through the back-to-school season, with a possible small speed bump in October/November, or more likely an entirely new iBook in early 2004.

In January, Apple chief Steve Jobs predicted that 2003 would be the year of the laptop, and Apple is aiming to have 50 percent of its total units sold be laptops. That aggressive price like these, we think he could be right.

QuarkXPress 6 for OS X ships

After months of speculation, rumors, and delays, the desktop publishing community will finally get a chance to use QuarkXPress 6 in Mac OS X. The new version, QuarkXPress 6 is very similar to version 5.0, but runs natively in OS X, and not just in Classic mode. Not only does Quark 6 run in OS X, it actually requires 16-16.2 to be used. The two other main features are multiple windows and full-resolution previews.

The Quark implementation of multiple windows is nice. You can get a list of the last five tasks you performed, for example, and undo just the third one (leaving the rest untouched). Otherwise, Quark 6 running under OS X looks almost identical to Quark 5 running under OS 9.

For some that will be a blessing as

Continued on page 64

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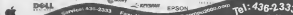
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What a difference a single slot makes

By Sean Connolly

WE recently tested a new Pentium 4 processor teamed up with a Canterwood motherboard—both new products from Intel. During our testing, we ran several benchmark tests on that configuration, as well as benchmark tests on AMD's then-current Athlon XP processor and the slightly older Pentium 4 3.06 GHz processor on an 845 motherboard. The results showed the new Canterwood combination providing excellent results, though those results lagged very slightly behind those of the older Pentium 4/845 combination by a very small margin.

Well, a few sharp-eyed readers pointed out that the numbers were not all they could be, and they're absolutely right: one of the most features of the new Canterwood boards is dual-channel memory support, designed to give better memory bandwidth and speed everything up. With two matched memory sticks, any motherboard with dual-channel support will be able to take advantage of greater performance; this includes boards designed for AMD's Athlon XP, as well. The hitch—and that is what caused our results to suffer—is that they have to be placed into the proper slots in order to put the motherboard into dual-channel mode.

A hitch from the past? Well, only kinda. Old-school readers who have been interested in computer hardware may remember how, to the days when computers required pairs of memory in all cases, you couldn't just insert one stick of memory; it had to have a partner in

Processor wars update				
	Pentium 4 3.06 GHz Canterwood dual-channel mode	Pentium 4 3.06 GHz Canterwood single-channel mode	Pentium 4 3.06 GHz	Pentium 4 3.06 GHz
PC Mark 2002				
CPU	1,381	7,464	7,510	1,380
Memory	8,964	7,483	8,549	8,999
FSX	300	258	1,028	1,028
SoftSandra Pro 2001				
CPU Math (MIPS)	6,576	6,570	6,576	6,530
CPU Math (MIPS) (FP)	7,400,080	2,400,035	7,399,060	2,400,035
Mathematical (MIPS)	16,670	15,950	16,670	16,670
Mathematical Floating Point (FPS)	20,485	20,425	20,477	21,271
Mean bandwidth (MB/s)	6,737	2,955	6,869	3,375
Mean bandwidth (MB/s) (FP)	6,737	2,955	6,869	3,375
GeekMark 2002				
Internet Content Creation	407	407	389	403
Office Productivity	223	216	197	218
System	285	272	283	285
CPU frequency	3.06 GHz	3.06 GHz	3.06 GHz	3.06 GHz
Front side bus speed (MHz)	800	800	800	800
Mathematical (MIPS)	Intel D01P8Z	Intel D01P8Z	Cyrix 6P800 U	Intel D01P8Z
Memory	32MB D01P8Z	32MB D01P8Z	32MB D01P8Z	32MB D01P8Z
Graphics card	Radeon 3000 Pro	Radeon 3000 Pro	Radeon 3000 Pro	Radeon 3000 Pro
Hard drive	7200 GB Seagate SA	7200 GB Seagate SA	7200 GB Seagate SA	7200 GB Seagate SA

order to function at all. That was essentially done away with when SDRAM was introduced, suddenly you could use one slot at a time and still be A-OK.

With new dual-channel boards, that's not exactly the case. You can use one slot of DDR memory at a time, and the board will run just fine. The catch is that it will only run in single channel mode.

As the testing last year around these, the results were still great, but in our readers have pointed out, that's not good enough! The boards are capable of better. We fully agree, and thus we're more than happy to advise our readers here—

with these new boards, it's a very easy misconfiguration to achieve, and a very easy one to set straight. So let's fix it up.

The proper config is only a slot away

If you've purchased a machine that supposedly features dual-channel memory, you may assume it's configured correctly simply because there are two identical sticks inserted into the motherboard. As well, because many motherboards are automatically configured to boot up silently, there may be no way of knowing the truth unless you boot your way into the BIOS settings and confirm it (even

when you've configured the BIOS to boot non-silently—in other words, to display the configuration data for memory, hard drives, and processor—the information may blow past your eyes so quickly that you won't be able to read it.)

If you're putting the machine together yourself, you'll be in a much better position to know if the setup is right. The important thing is to read the motherboard documentation, then read its BIOS. Many people who have been building systems for a while may be used to making two DDR modules into slots directly next to each other, but that may

Continue on page 12

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WillExpert aims for legacy of family harmony

By Jeff Evans

When I was a kid, I remember seeing at least a couple of pictures each year in the newspaper, showing people grappling in the dust on the sidewalks in front of funeral parlours, working out family problems related to the passing of a loved one.

WillExpert

Price: \$19.95 (includes tax)

Age: Adults

Pros: Easy to use, informative, educational. Walks you through difficult tasks, issues and test responses. Can't. Accessing compulsory online registration before use, program is not compatible with Quebec law. To use is limited to 1000 file size of the notepad. Requires some learning of terms and concepts to use most effectively. In some circumstances, you may still want to get a lawyer's help. A warning to ensure no filing issues.

In my innocence, I couldn't understand what reason there might be for people to behave in such a strange fashion at such a solemn moment. As the years have passed, I have begun to understand that the way we write our wills and plan the disposal of our "estate" (the sum of the property and other assets we own) can have a deep and lasting effect, for good or ill, on our family and friends. So, when I heard about WillExpert, a new Canadian will and estate planning software package from tax and finance publisher Intuit Canada, I was very intrigued.

According to Intuit Canada's Brad Stoenberg, WillExpert is designed to let any person easily plan, write and print a

basic will and related documents, such as letters to executors and guardians, powers of attorney, and personal health care directives.

Stoenberg says about half of all Canadians have never composed a will, and of those writers, many are never updated to account for changes in financial or personal circumstances. The results of a poorly written will can include deeply hurt feelings, anger, and conflict among surviving family members, and even substantial legal expenses as survivors squabble over the estate.

Intuit Canada saw a market demand, especially amongst baby boomers, for simple estate planning software and developed WillExpert.

According to Canadian estate planning experts and authors Len Kotler and Barry Fish, there are good practical reasons to face up to the often difficult subject of making a will. "Planning ahead can often prevent, or at least minimize the risk of family fighting. Planning ahead can avoid costly court actions and it can ease the burden on your loved ones, if and when tragedy strikes."

Kotler and Fish have published a well-received book on estate planning, *The Family Fight: How to Avoid It* (www.fightfamily.com/canada/book_order.html), which makes a convincing case for planning one's will carefully and promptly.

WillExpert incorporates Intuit's many years of experience designing intuitive user interfaces, offering a simple question and answer format for step-by-step creation of a legally sound, comprehensive will. The software was developed with the aid of Canadian will and estate

lawyers, and all its major features comply with Canadian law as applied everywhere in Quebec (as much as the law governing estates in Quebec is a provincial responsibility, a considerably different program would be required for use in a bulk province).

Out of the box

The installed WillExpert on a Compaq 5310 Pentium 4 computer running Windows XP Home Edition (minimum system requirements are a 133 MHz Pentium, or equivalent, processor with 32 MB RAM, running Windows 95 or higher). Installation was simple; we inserted the CD and followed the installation prompts. WillExpert required only one registration to be activated (if you don't have an Internet connection, you can get your activation key by phoning Intuit). The software can only be used on one PC, and the license is limited to two finished wills.

The compulsory registration and limited user license, increasingly common with new software, is a bit irritating, but as with its sister software, Intuit is trying to ensure that one copy of software doesn't get passed around to unlicensed users.

The program is fairly simple to use and is similar in concept to Intuit's tax software in that it has been simple to use and tries to anticipate common questions. At every stage, WillExpert offers a wealth of answers to basic questions about wills and estates, definitions of legal terms, full-estate advice, advice suggests from experts, and sample concern forms.

There is still a learning curve to

WillExpert, though. I'm not a legal expert, and it took me a while to understand the terms and concepts, and practical and legal requirements of even my very simple will. I spent a couple of hours clicking the Learn More button and reading through the program's Planning and User Guide. According to Intuit's Stoenberg, for many Canadians with fairly simple finances and limited property, WillExpert may be the only tool you need to create a decent, workable will and related documents. However, he cautions that in cases where the estate is fairly complex, or where the amounts of money and property are substantial, it is still a good idea to have the finished will in a lawyer's office, to ensure that any glaring errors or omissions are corrected.

According to Stoenberg, if you have any particular questions about special circumstances—a relative's disability, pension, institutional care contracts, or other situations that might affect the disposition of an estate's assets, for example—ask a lawyer. A half-hour consultation fee will still be a lot cheaper than the full cost of a lawyer writing your will from scratch, and in the course of using WillExpert, you'll have gained a lot more understanding and control over an important responsibility, and an opportunity to increase your family's long-term harmony and prosperity.

The briefest known will in history was composed by a Czech gentleman, who simply wrote a two-word Czech phrase that means "All is well." Intuit's WillExpert isn't quite that simple, but it's a big leap in the right direction. □

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Videoconferencing a bridge between deaf, hearing users

By Geoff Wenzelwright

Internet-based videoconferencing has slowly been gaining acceptance in the business world, but for a growing number of deaf and hearing-impaired consumers it is opening up a whole new way of communicating with others over long distances.

In recent years, deaf and hearing-impaired users have widely adopted email and instant messaging technology to "chat" online using their computers. Now, however, they can use new videoconferencing-based services to speak to others in sign language and see their replies displayed back to them on the videoconference screen by sign-language fluent operators. And it is being used in all kinds of places.

The University of Washington, for example, promotes the use of its service for its deaf and hearing-impaired students. Known as the Video Relay Service (VRS), it's a supplement to the telecommunications Relay Service (TRS). Both

services facilitate telecommunication between non-hearing and hearing individuals.

The university says VRS is an important alternative to the original TRS, since many individuals with hearing impairments prefer to use American Sign Language (ASL) as their primary method of communication.

The original TRS provides two-way translation between spoken word and typed text. The hearing user communicates by voice, the non-hearing user communicates by typing on a TTY, and the relay operator serves as a liaison, communicating by voice to the hearing party and by text to the non-hearing party.

The university says VRS is an important alternative to the original TRS, since

many individuals with hearing impairments prefer to use American Sign Language (ASL) as their primary method of communication.

Unlike TRS, VRS is not mandated by federal law in the U.S., and the Federal Relay Service, established through the Telecommunications Enhancement Act of 1993, does not yet provide VRS services. Some states, however, have begun to provide this service, even to consumers who live outside their jurisdictions.

National VRS has been offered last year when D.S. telephone giant Sprint and CSO (a private, not-profit human service agency headquartered in Sioux Falls, S.D.) that is the world's largest telecommunications relay service provider) initiated the first nationwide Video Relay Service for the deaf and hard-of-hearing. It allows customers in the U.S. to use ASL in visual conversations over advanced phone networks. The service, known as USA VRS, is available at www.usavrs.com.

VRS is Web-based and entails either special phone terminals or personal com-

puters with a high-speed Internet connection, Microsoft Internet Explorer Web browser, WebCT software, and an inexpensive Web cam.

USA VRS, accessible anywhere in the U.S. via the Internet, is free. The service allows callers to use ASL to "converse" with a video interpreter via online link, who then translates those signs into speech for standard voice users or TTY text.

The U.S. Federal Communications Commission (FCC) strongly encourages the use of video interpreting services. Sprint says it is "the nation's leading provider of telecommunications relay services (TRS)" and boasts more than a decade of experience. The U.S. government, 27 states, and the Commonwealth of Puerto Rico currently use Sprint to operate 32 relay centers. Relay services in each state were mandated by the Americans with Disabilities Act of 1990 and are paid for by all local phone customers through state fees included on monthly bills. □



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Technology, Toronto, and the SARS outbreak

By Jeff Evans

It is poetically fitting that Toronto, the nation's high-tech hub, and a major portal between Canada and the global economy, was the epicentre of the Severe Acute Respiratory Syndrome (SARS) outbreak in North America. A traveller from Hong Kong brought the disease into the city, and on March 7, he was, suffering from an unidentified respiratory illness, presented himself at Scarborough Grace Hospital, and was initially diagnosed with tuberculosis. By March 14, SARS' presence was confirmed, and it had begun to spread to health care workers, patients, and their families in Toronto.

The technological weakness of the Toronto Public Health department's disease control system was exposed, as it turned out that the department had failed to even maintain a comprehensive database for tracking communicable disease cases, despite data pushed by database vendors over the years, not to mention the flow of information since the terror attack in Washington and New York on Sept. 11, 2001.

According to the Toronto Star and the CBC, at the beginning of the outbreak, records of 450 patients, suspected patients, and quarantined persons were filed out by hand on paper forms, which were stored in cardboard boxes.

The task of trying to correlate the paper records, in an attempt to track the route of SARS transmission, required manual comparison of many thousands of paper records, which took countless

numbers of hours of manual labour.

Eventually, an Excel spreadsheet template was cribbed together, and disease transmission and quarantine records were manually entered. However, the template used by Toronto Public Health was incompatible with Excel templates or database forms used by other Canadian health agencies in the provincial and federal governments, as well as international health agencies including the World Health Organization and the U.S. Centers for Disease Control (CDC).

This necessitated manually copying or cutting and pasting the Toronto Excel spreadsheet information into other systems. Once the data was finally entered into a usable computer format, however, it became much faster and easier to trace transmission routes of the disease.

One outcome of the SARS episode is likely to be a belated attempt by Canada's national, provincial and municipal governments to put aside their endless IT war, at least to the extent of adopting a truly interoperable database system for disease reporting, tracking and control.

As SARS worked its way through some Toronto hospitals, many effects on the technology industry and the financial industry also popped up.

On April 10, Hewlett-Packard Canada (hewlett.ca) stated that it had to send nearly 160 of its Toronto-area workers to home quarantine, allegedly after a worker who was exposed to the disease came to work despite being instructed to stay home in quarantine. As a result of the possible exposure of fellow workers to the virus, HP's staff (102 full-time



At the beginning of the outbreak, records of all SARS patients, suspected patients, and quarantined persons were filed out by hand on paper forms, which were stored in cardboard boxes.

employees and 95 contract workers, according to an HP Canada spokesperson) at a Markham facility were sent home for a quarantine period, while other HP Canada staff filed in.

Investment firm Merrill Lynch Canada (merrill.ca), which has its main offices in downtown Toronto, moved its key trading staff out of the downtown site to a backup facility in Stouffville, Ont., for several weeks, to avoid the possible risk of SARS exposure and quarantine of critical employees,

which could have had a crippling effect on the company's multimillion-dollar per-day investment business in Canada. A Merrill Lynch source claimed that the re-deployment was done as much as a test of the backup facility as it was a response to SARS.

The senior management of IMAX Corp. (imax.com), the guest-screen movie company that was founded in Toronto, avoided coming to Toronto for a scheduled shareholders' meeting on June 4. Instead, they preferred to use a videoconference from New York to deliver the company's financial results, their images appearing on an eighty-story high screen in a Toronto theatre.

On June 9, software giant Microsoft (www.microsoft.com) announced that due to SARS fears it had changed the location of its annual partner event from Toronto to New Orleans. The event will go ahead on the originally planned date, October 9 to 12. To affirm the flow to Toronto's already struggling tourism, hospitality and convention industry, Microsoft promised to hold next year's partner event in Toronto.

According to financial analysts at investment firms J.P. Morgan and Merrill Lynch, the SARS outbreak centred in the Toronto area is expected to cripple Canada's national economic output, at least in the short term, by as much as 1.5 percent, compared to estimates of GNP growth prior to the outbreak.

However, SARS may also help drive a trend for companies to deploy secure, *Continued on page 77*

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◀ TECH IN THE REAL WORLD ▶

Voice recognition helping customers connect

By Gae Wheelwright

Voice is becoming big business. That fact was very much in evidence at California-based Nuance's annual V World user conference in San Francisco in late April. The company is a leader in voice recognition and speech applications, producing a range of solutions that are often used in corporate call-center applications.

Rather than installing a system that requires users to "press one for this, press two for that," and so on, interactive voice-recognition (IVR) systems allow users to state what they want where they call a company and then have the IVR system route the call to where it needs to go. It not only allows customers to get their issues dealt with quickly, but companies can process higher volumes of calls with fewer levels of staff (so many queries can be answered with an automated response).

The theme of the conference was "accelerating the value of voice" (i.e. getting quick return on investment), and one very interesting example of this came from representative of Avon's IT division who gave a talk on how it is using voice recognition technology to evolve its business.

The cosmetics giant—which used to rely heavily on door-to-door sales agents—is currently undergoing a major corporate facelift as it across through middle age and is using the Web and voice recognition technology to do so. One of the fascinating things she revealed is that about 28 percent of Avon customers in the U.S. still use rotary dial telephones.

This means that when they dial into the Avon call centre, they have to wait through all the dial pad button option messages before they're put on hold to get through to a human operator. By using voice recognition technology, all these rotary dial customers are now able to start getting help right away—and



One of the fascinating things she revealed is that something like 28 percent of Avon customers in the U.S. still use rotary dial telephones.

customer support agents can get through to the calls that really need human intervention more easily.

"Speech is adding substantial value to businesses around the globe," and Chuck Berger, president and chief executive of Nuance "From Avon in the United States to UBS in Switzerland and TELUS in Canada, companies are automating tasks, reducing costs, offering new revenue-producing services and acting themselves apart from the competition with speech. The return on investment for these speech solutions is staggering—many pay for themselves in a matter of months."

Industry analysts predict that revenue from voice-enabled services will reach \$1.4 billion by 2004 and analyst firms such as Gartner Group are listing speech recognition as one of 2005's top 10 "strategic technologies." One of the catalysts for market growth is the emergence of packaged speech applications that simplify deployment, reduce time-to-market, and, as mentioned already, speed up the return on investment. (Showcased at V-World, Nuance Call

Silence of the fans: the quest for a quiet PC

By Steve George

How much noise is too much noise? When it comes to computers, it depends on who you talk to. To the dedicated gamer with her speakers cranked, case noise may mean nothing at all. To the writer fidgeting at the empty white Word document on his screen, even the hum of the power sup-

ply can sound like a jet taking off. The more of us computer users is annoyed only when we become conscious of it, and as computers migrate from the home office into the living room or family rooms, we're becoming conscious of it more often than not.

We've been living with computer noise for as long as it has become the background hum of our lives. Noise, we are

led to believe, is the price we pay for performance. Look at the evolution of today's CPUs—eaves on the last couple of years—and it's easy to see why Intel's Pentium III Coppermine (500 to 750 MHz) output 15 to 19 watts, compared to 40 to 75 watts for the early Pentium 4 (1.3 to 2 GHz), and 62 watts and more for the Pentium 4 5.06 GHz chip. AMD chips follow a similar evolutionary path. Think of placing your hand around a 100-watt light bulb. Ouch! All of these chips take some powerful cooling, and that means fans, and that means noise.

High performance CPUs and the fans required to cool them aren't the only source of computer noise, of course, and in some cases may not even be the primary cause. Noise tends to come from the direct sources: the hard drive, the power supply and its fan, the CPU and its fan, optical drives, and general electrical hum from components, including the monitor.

Depending on your system, you may also have one or more case fans. If you have a dual-processor system, add yet another fan. A cutting-edge system may generate noise in the range of 50 to 60 decibels (dBA), similar to a refrigerator. Compare that to a whispered voice at 30 dBA, or big city freeway traffic at 70 dBA. Saying that a modern PC is as noisy as a jet taking off may not be far off the mark.

If all this makes you doubt that you have any chance of achieving computing silence in your lifetime, relax. It's been done before. When Apple introduced the Mac desktop computer five years ago, it was revolutionary in more ways than


one. In addition to vibrant colours and unconventional design, the Mac brought something else, something unheard-of, to the desktop Silence. Unlike its PC brethren of the era, the Mac had no CPU cooling fan—it kept its G3 processor at optimal operating temperature with a passive heat sink. If Mac users can benefit from some creative design and attention to silence, then so can PC users.

The big chip manufacturers are aware of the problem. Thermal management without excessive noise is becoming a reality, though it's still downwind of the cry for improved performance. Even Microsoft has identified computer noise as one of the big issues that will need to be addressed in the next few years. And there has been progress. Laptop bearings on hard drives are a huge improvement. Innovative designs in heat sinks and fans are another. Some of the new breed of CPUs and motherboards control fan speed based on CPU load, ensuring the system remains relatively quiet until it heats up.

So, have hope. The silent PC, or at least the relatively quiet PC, is coming, and probably sooner than you think. In the meantime, for those who can't wait, we offer some suggestions for putting a lid on what may be the noisiest member of your household.

For existing systems

- **Down rat the noise.** Open up your favourite MP3 player and put on a few tunes. Run low-level background music is usually enough to drown out the noise from a PC.



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WHAT'S NEW

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Empire (www.empire.com) is jumping on the wireless bandwagon. The Naperville, Ill.-based company has launched what it says is the world's first notebook with an integrated internal tri-band GSM/GPRS 900/1800/1900 module, allowing users to connect to the Internet from anywhere they could use their tri-band mobile phones.

The Eumecom N1905 World Warbler notebook uses GPRS (General Packet Radio Service), which allows larger, faster data transfers and an "always on" style connection, much like using a Walkie-Talkie. In Canada, Palo and Rogers offer GSM/GPRS networks.

The notebook includes a Mobile Intel Pentium 4 processor at speeds up to 2.4 GHz, a 12.1-inch TFT screen, up to 3 GB DDR400 DRAM, and up to 60 GB, 5,400 rpm hard drive. Buyers can opt for a CDMA connection module instead of the GPRS. The notebook is available from the company's Web site, with prices starting at \$1,549.



It's possible that someday, home appliances may have better communication skills than many of your family members? GE advertises its new Profile Harmony Clothes Care System with the tagline "The washer talks. The dryer listens." According to GE, once the wash options are selected, the washer sends information about the load to the dryer which then automatically chooses the best settings for drying.

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WHAT'S NEW

Continued from page 60



And apparently the appliances' communication skills are not the only qualities that make them good citizens. GE says the washers use up to 48 percent less water than a traditional top-load machine, automatically adjusting water levels to match the size of the load.

The washer also offers agitator-free washing, a Stain Inspector system, and timed release of detergent. Models add

ties, and fabric softener. The dryer has two motions, two moisture sensors, and two temperature sensors, as well as an extra low delicate temperature setting, according to GE. Suggested retail prices for the new start at \$551.995.

The good news about having an iPod is you have access to your music all the time, whenever you go. The bad news is listening to music through headphones is not always a good idea—it can be unsafe while driving and impossible while eating with friends. So Griffla Technology (www.grifflatechnology.com) came up with the iRip.

The King is an FM transmitter that fits into the iPod (an updated model for the new iPods has just been released) and will broadcast the iPod's music to any frequency on an FM radio, according to Griffin. It draws its power from the iPod battery, and can keep working even when the iPod is dozed or sleeping.

And in this case, being polite doesn't even cost that much. The firm's suggested retail price is US\$16.

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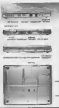
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